

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No **(DQA: _____ Date: _____)**

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 79093

79093

Page 2

January-19-12 3:15:17 PM

Item ID: D3688-3 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: STUD
 Start Date: 19/01/2012 Start Qty: 6.00 *6* Cust Item ID:
 Required Date: 02/02/2012 Req'd Qty: 6.00 *6* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC8- Inspect parts - second check	0.00							
170									
QC	Memo	0.00							
Quality Control	100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT								
180	PURCHASING	0.00							
180									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 16555 LPI Per ASTM 1417 LEVEL 2Certificate of conformaty is required								
190	Receive & Inspect for Damage & Mat'l Certs	0.00							
190									
Packaging	Memo	0.00							
Packaging	Ensure certificate of conformity is attached								

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No ☒ QA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 79093

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Page 3

January-19-12 3:15:17 PM

Item ID: D3688-3 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: STUD
 Start Date: 19/01/2012 Start Qty: 6.00 *6* Cust Item ID:
 Required Date: 02/02/2012 Req'd Qty: 6.00 *6* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	QC5- Inspect part completeness to step on W/O	0.00							
200									
QC	Memo	0.00							
Quality Control									
210	Identify as per dwg & Stock Location: <u>ST GA</u>	0.00							
210									
Packaging	Memo	0.00							
Packaging									
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.00							
Quality Control									

(x6)
-3

(ex) SP 12-03-30

12/4/12 JG
12-03-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No **PQA**: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

January-19-12 3:15:23 PM

Page 1

Work Order ID: 79093

79093

Parent Item: D3688-3

D3688-3

Parent Item Name: STUD

Start Date: 19/01/2012

Required Date: 02/02/2012

Start Qty: 6.00

Required Qty: 6.00

Comments:

Rev:A New Issue 08-01-29 JLM Verified By:EC
IPP Rev:B Material Change 09-01-07 JLM Verified By:EC
IPP Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased		No		100	f	21.2000	0.788	4.976842			
M174PH-H900R1 000									**				
17-4SS H900 ROUND BAR 1.00													

Location

MAT030

Loc Qty

21.2

21.2

Loc Code

2 parts
- 117445
120767

7213178

1.6

3.3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	79093
Description: Stud		Part Number:	D3688-3
Inspection Dwg: D3688	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	.700	/		SA-9	U/L
0.625	+0.004/-0.000	.627	/			
1.25	+0.000/-0.03	1.24	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	R.03	/			
0.11 Ref	+/-0.030	.11	/			
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	.192	/			
1.31	+/-0.030	1.31	/			
1.65	+/-0.030	1.65	/			
0.870	+0.000/-0.010	.862	/			
Ø0.659	+0.000/-0.015	.650	/		SA-5	Me
9.324	+/-0.015	9.336	/			
2.90	+/-0.030	2.90	/			
3/4-16UNF-2A	N/A		/		SA-5	Me
0.075 x 45°	+/-0.010 x 0.5°	.075 x 45°	/			
0.370	+0.000/-0.010	.382	/			
Ø0.189	+0.005/-0.001	.192	/			
R0.25	+/-0.030	R.25	/		R.G.	
R0.50	+/-0.030	R.50	/		R.G.	

Measured by:	SA	Audited by:	AMR	Prototype Approval:	N/A
Date:	12/3/19	Date:	12/03/22	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	
B	09.11.04	Dwg Rev updated	KJ	

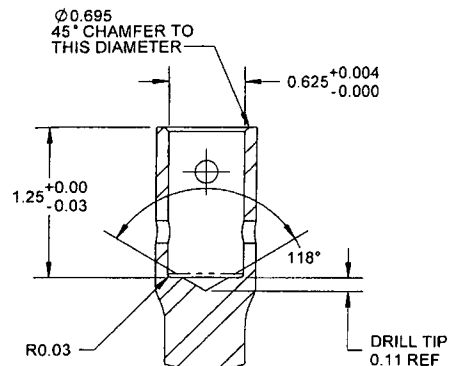
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

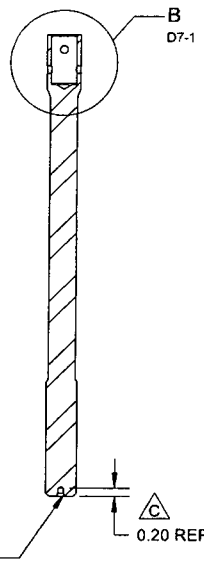
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

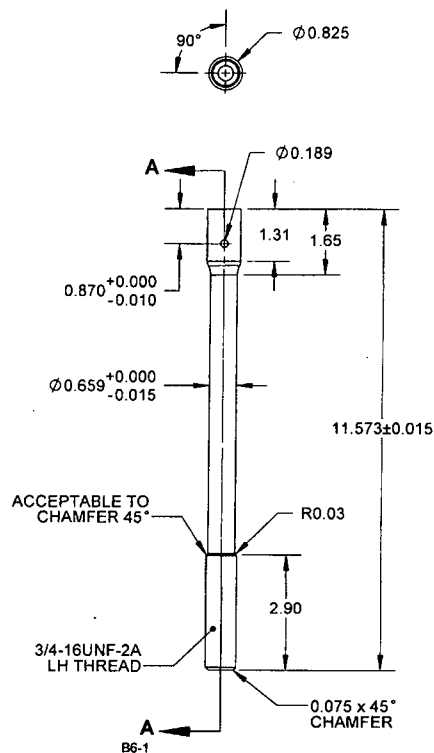
NOTE: Date & initial all entries



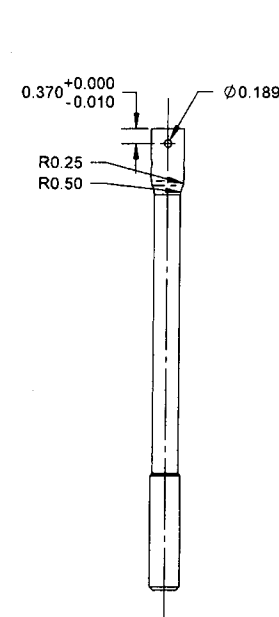
DETAIL B
SCALE 3X
D6-1



SECTION A-A
D4-1



D3688-1 STUD



RELEASED
2009-09-22

SUB
KAR
BROOK
UNCONTROLLED
SUBJECT TO
WITH
W/C

NO. 79093 M.L.J.
12/01/19

NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.24 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

C	0.20 WAS 0.16 (ZN B5-1, B5-2, B6-3, B5-4); CENTER DRILL #4 WAS CENTER DRILL #2 (ZN B6-1, B6-2, B6-3, B6-4); UPDATE NOTE 8 TO REF QSI (ZN A8-1, A8-2, A8-3, A8-4)	RF	09.09.09
B	CHANGE TO 17-4PH H-900 (ZN A8-1, A8-2, A8-3, A4-4); REDUCE LENGTH ON D3688-1 FROM 12.073 TO 11.573 (ZN C3-1) BASED ON PROTOTYPE INSTALL: 0.695 WAS 0.665 (ZN D8-1, D8-2, D8-3); 0.508 WAS 0.478 (ZN D8-4); REFORMATTED TO CURRENT DWG STANDARDS	RF	08.11.24
A	NEW ISSUE	RF	08.05.22
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	97		
MFG. APPR.	21		
APPROVED	140		
DE APPR.	140	SCALE NTS	
DATE	09.09.09		
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W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

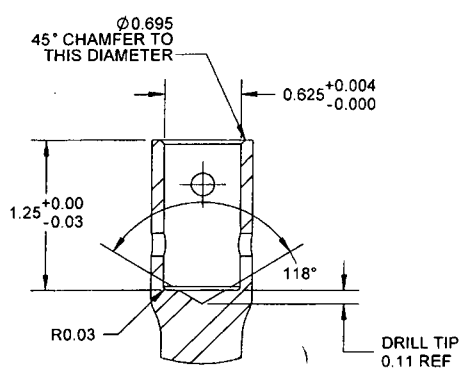
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

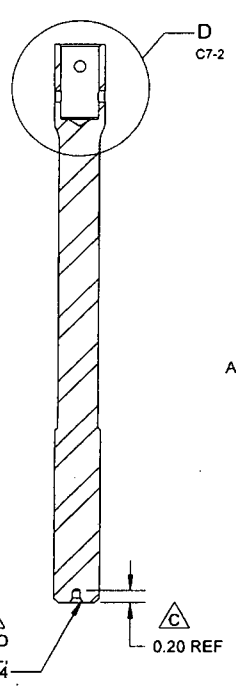
NOTE: Date & initial all entries

79093

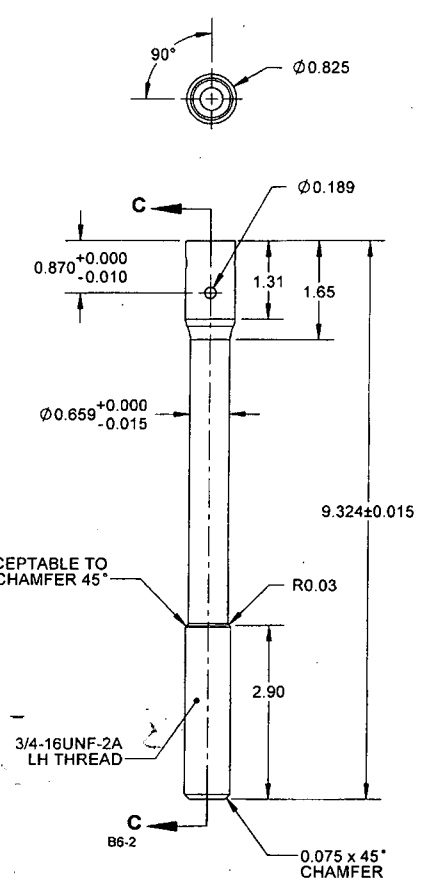
8 7 6 5 4 3 2 1



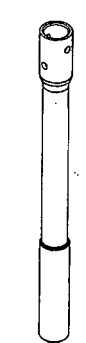
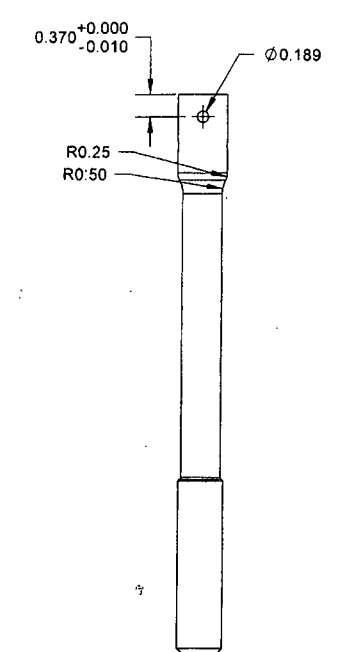
DETAIL D
SCALE 2X
D6-2



SECTION C-C
D4-2



D3688-3 STUD



- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.97 lb
 - 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

RELEASED
2009-09-22

DESIGN	.RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>RF</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>RF</i>	D3688	SHEET 2 OF 4
APPROVED	<i>RF</i>	TITLE	SCALE
DE APPR.	<i>RF</i>	STUD	NTS
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8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
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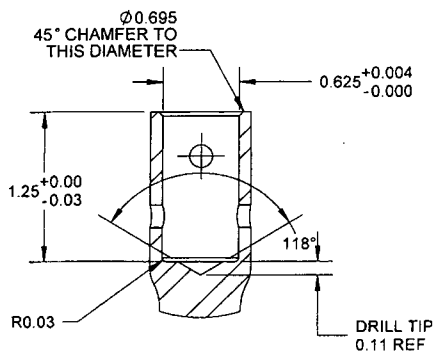
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

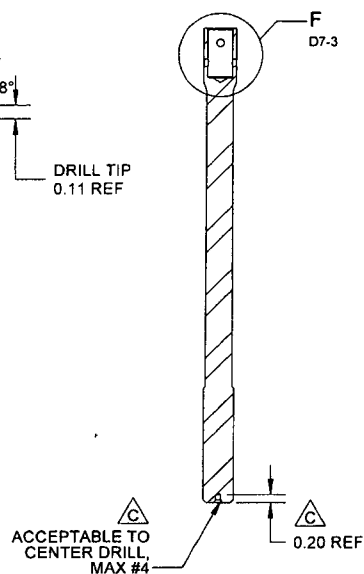
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

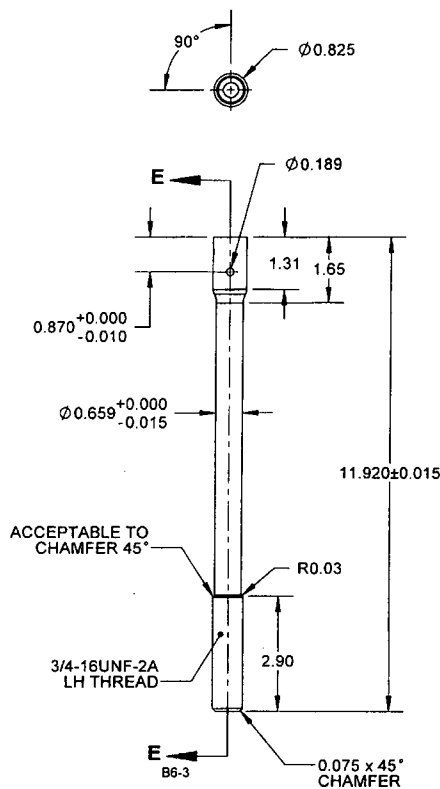
79093



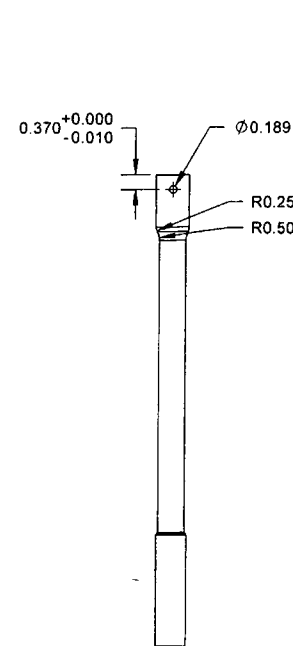
DETAIL F
SCALE 3X
D6-3



SECTION E-E
D4-3



D3688-5 STUD



NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.26 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

RELEASED
2008-09-22

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	GP	DRAWING NO.	REV. C
MFG. APPR.	GP	D3688	SHEET 3 OF 4
APPROVED	GP	TITLE	SCALE
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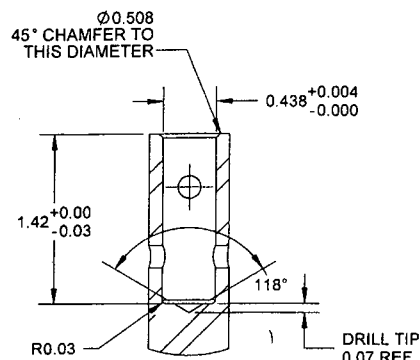
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

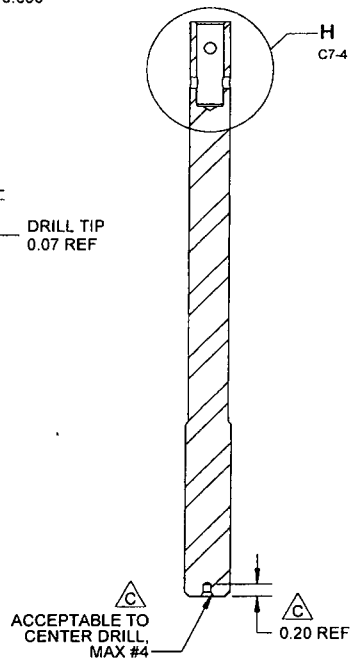
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NOTE: Date & initial all entries

79093



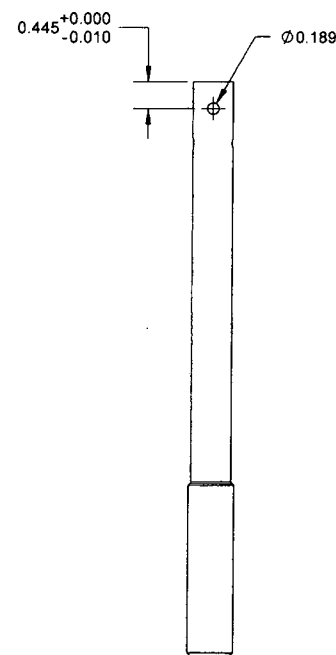
DETAIL H
SCALE 2X
D6-4



SECTION G-G
D4-4

D3688-7 STUD

- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.97 lb
 - 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)



RELEASED
2009-09-22

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D3688	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
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NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 12179

PAGE 1 OF 1

CLIENT	DART Aerospace	DATE	03/23/2012	TIME	AM <input checked="" type="checkbox"/> PM <input type="checkbox"/>
ATTENTION	LINDA LACELLE	ACUREN JOB NO.	188-12-00072		
ADDRESS	1270 ABERDEEN	PO/OW No.			
	HAWKESBURY ON	WORK LOCATION	SAME		
		ACCEPTANCE STD.	ASTM 1417/031-038	REV./DATE	2005
PROJECT	F.P.I. ON MACHINED PARTS				
ITEM(S) EXAMINED	(30) STUDS				

JOB DESCRIPTION	PROCEDURE NO. LT-02	REV./DATE	2008	TECHNIQUE NO. LT-1412	REV./DATE	2008	
PART NO.	SEE RESULTS		MATERIAL	STAINLESS STEEL		THICKNESS	VARIABLE
SCOPE	A WET FLUORESCENT LIQUID PENETRANT INSPECTION WAS CARRIED OUT ON THE 100% EXTERNAL SURFACE.						

TEST DETAILS							
METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED		
FAMILY BRAND	MAGNAFLUX		BLACK LIGHT S/N	16459	<input type="checkbox"/> OUTPUT > 1000 μ W/cm ²	<input type="checkbox"/> AMBIENT < 2 fc	
PENETRANT	2407	MINIMUM DWELL TIME	45 MIN.	LIGHTING EQUIP.	<input type="checkbox"/> FLASHLIGHT	<input type="checkbox"/> TROUBLELIGHT	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER	H2O	MINIMUM DRY TIME	> 10 MIN.	OTHER	LABINO		
DEVELOPER	1452	MINIMUM DWELL TIME	10 MIN.	LIGHT METER S/N	1098866	CAL DUE DATE	JUL 06
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY				

TEST SURFACE					
SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input checked="" type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F	<input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F	<input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F	<input type="checkbox"/> > 52°C/125°F	

RESULTS- (<input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL)	
W.O. #	
4 - 79308 - STUDS ✓	
12 - 80363 - STUDS ✓	
6 - (79093) - STUDS. ✓	
5 - 79300 - STUDS. ✓	
	5/2/03/09

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE	Andrew Shaldon	PRINT	SIGNATURE	DTR #	E-63476
TECHNICIAN (SIGNATURE):	M. KE. JOHNSON			REPORT REVIEWED BY:	
NAME (PRINT):	M. KE. JOHNSON			NAME	INITIALS
	1 ST TECHNICIAN		2 ND TECHNICIAN		
CGSB LEVEL	II	SNT LEVEL	II	CGSB LEVEL	
CGSB REG. No.	06606	CGSB REG. No.			

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY